SYNOPSIS

Webometric study of college libraries in Maharashtra: 2019-22

Submitted to

Swami Ramanand Teerth Marathwada University, Nanded

For the Degree of

Doctor of Philosophy in Library and Information Science

under the faculty of **Interdisciplinary Studies.**

by

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INTRODUCTION:

Library and information science is concerned with different information resources. Information structures such as inter-relations of information resources are generated, organized, distributed and utilized by different uses in different contexts. Libraries are the appropriate medium to disseminate variety of information resources through services locally as well as globally. In library science there are different metric studies are used, such as statistical bibliography, librametrics, bibliometrics, scientometrics, webometrics and informetrics to measure scholarly communication, identify research trends, growth of knowledge, uses of different subjects.

For measuring the effectiveness of library and information Centre's services, it adopted vide application of advanced technologies, mainly information and communication technology (ICT). The World Wide Web has become the main component of ICT. By the application of ICT, services become faster and easily accessible. The application of WWW has emerged as a new research area in library and information science because the WWW has now become one of the main sources of information for academic and research community. It provides an excellent platform to test new methods of evaluating webometric activities. The science of study of web was named as webometrics by Almin and Ingwerson (1997).

Webometric is a combination of theories of informetrics, scientometrics and application of bibliometrics. Webometrics is the study of quantitative aspect of the construction and use of information resources, structures and technologies on the web, drawing on bibliometric and informetric approaches. This definition covers the construction side and usage side of the web which embraces four main areas of webometrics study:

1. Web page content analysis.
2. Web link structure analysis (e.g., Hyperlink, self-link and external link).

3. Web usage analysis (e.g., exploiting log files for users searching and browsing behavior).
4. Web technology analysis (including search engine performance).

DEFINITIONS:

Webometric:

Bjorneborn (2004) defines webometrics as "the study of quantitative aspects of the construction and use of information resources, structures and technologies on the web drawing on bibliometric and informetric approaches."

Thelwali (2009) defines webometrics as "the study of web-based content with primarily quantitative method for social science research goals using techniques that are not specific to one field of study."

1. Study:

Concise Oxford English Dictionary, (2007a) 'study' means, "a detailed investigation and analysis of a subject or situation, a thing that deserves to be investigated, done with deliberate and carefully effort."

2. College:

The Maharashtra Public University Act (2016) defines "Colleges means a college affiliated to the university, situated in the university area or jurisdiction."

3. Library:

Harroald's Librarian Glossary (2005) defines "A collection of books and other literary material kept for reading, study and consultation."

4. Affiliated:

Concise Oxford English Dictionary, (2007a) "affiliated" defines as "Closely connected to or controlled by a group or an organization."

5. University:

The Maharashtra Public University Act (2016) defines "University means any of the public universities mentioned in the schedule and includes a cluster university within the meaning of sub-section (6) of section (3).

6. College Library:

Gaur P. N., Glossary of Library Science and Technical Terms (1996) defines the term "college library" as "a library organized and administered by a college for the use of its students and members of staff"

A. REVIEW OF RELATED LITERATURE:

Previous work done in the relevant area.

1. Thomas, O. and Willett, P. written article "Webometric analysis of departments of librarianship and information science" describes a webometric analysis of the linkages (or 'citations') to websites associated with departments of librarianship and information science (LIS). Citation data are not well suited to the quantitative evaluation of the research status of LIS departments, so these departments can boost their Web visibility by hosting as wide a range of types of material as possible published in Journal of Information Science, 2000. 26(6), p. 421-428.
2. Gopalakrishnan S., Ambuja R., Seetharama S. examines the nature and pattern of citations of information scientists in Seminar proceedings of Indian origin and one volume of an international journal in the field of library and information science. It reveals that the trend of citations has changed over time and web citations would replace other citations. In their article titled "A webometric study on library and information science literature" which published in Annals of Library and Information Studies, 2002, 49(1), p.29-35.
3. Björneborn & Peter Ingwersen defines webometrics within the framework of informetric studies and bibliometrics, as belonging to library and information

science, and as associated with cybermetrics as a generic subfield. They develop a consistent and detailed link typology and terminology and make explicit the distinction among different Web node levels when using the proposed conceptual framework. Also propose a novel diagram notation to fully appreciate and investigate link structures between Web nodes in webometric analyses. In the article "Toward a Basic Framework for Webometrics" published in Journal of the American Society for information science and technology, 2004, 55(14), p. 1216–1227.

4. Ravikumar S. written an article title as "A Webometric Study of Selected Academic Libraries in India using Link Analysis" published in Researchgate.net, 2007 has investigates the link pattern of the institutions' libraries which is governed by the government of India. In this study around 39 universities were selected with the help of www.google.com search engine.
5. Jeyshankar R. and Babu Ramesh B. examines and explores through a webometric study the websites of 45 universities in Tamil Nadu comprising of 27 state and 18 private universities. Identifies the domain systems of the websites, analyses the number of web pages and link pages, and calculates the simple Web Impact Factor (WIF), self-link Web Impact Factor and external Web Impact Factor of the University websites in Tamil Nadu and ranks the websites as per the WIF. In the article titled as "Websites of universities in Tamil Nadu: a webometric study" published Annals of Library and Information Studies, June 2009, Vol. 56, p. 69-79.
6. Krishnakumar P., Nirmala P. J. examined the traffic and page ranks of Research Councils of India websites and also state that it could be continue further by compare other academic or research bodies within the particular geographical coverage. Like the global rank, the AlexaTraffic Rank in their

article titled “Webometric study of research councils of India.” published in E-library science research journal, June 2014, 2(8), p. 1-6.

7. In article titled as “Websites of Central Universities in India: A Webometric Analysis” written by Babu Ramesh, Jeyshankar R. published in DESIDOC Journal of Library & Information Technology, July 2010, Vol. 30(4), pp. 33-43. The study of 40 central universities websites conducted. They investigate domain systems of the websites, analyses the number of webpages and link pages and calculates the simple web impact factor, self-link web impact factor, external link web impact factor and revised web impact factor. It develops a network diagram showing link structures between web nodes in webometric analysis.
8. Dastan M. and Atarodi A and Panahi S. written the article titled as “Webometrics Ranking of Digital Libraries of Iranian Universities of Medical Sciences”. In this study The URL and link of 42 digital library website is obtained directly by visiting the university’s website. To extract the number of indexed web pages (size), rich files have used the Google search engine. Google Scholar Search engine have used to extract the number of scientific resources retrieved. To calculate and obtain the number of links received have used the MOZ search engine. This article published in International Journal of Knowledge Content Development & Technology, September 2018, Vol. 3, p. 41-32.

B. OBJECTIVES OF RESEARCH:

The objectives of research are to find the answers to questions through the application of scientific procedure.

1. To find out present position of the college library’s website.
2. To analyse the domain of college library websites of Maharashtra state.
3. To calculate the number of web pages of college library website.

4. To evaluate the contents of the college library website.
5. To find out internal and external link pages of college library website.
6. To calculate the web impact factor of simple link, internal link and external link pages of college library website.

C. HYPOTHESIS:

1. All affiliated college libraries have separate websites.
2. Affiliated college libraries are offering online retrospective and current awareness services to the users.
3. Users such as teachers, researchers and students of respective colleges can access information through Online Public Access Catalogue of college library.
4. Remote Access of e-journals, institutional repository has been given to the users.

D. METHODOLOGY:

This study required the data to be collected from various sources like college/library websites, annual reports published by universities for the period of three academic years 2019-2022 to find out the prevailing situations. The appropriate method for this study is survey method. The survey method has been selected as it is to be limited to one state only. As a college library is treated as a social unit which it is, the present study will treat as a case study.

The methodology for study involves college library website's survey and content analysis of library websites. The collection of URLs of selected web address and collection of data will store and retrieve in MS-Excel which will retrieve or collect through search engines. Search engines' advanced web queries will be used to find the approximate number of pages in each website that link to one another.

This study will be involved into two parts, 1. Content analysis of website, web page of college library, 2. Web link data for link structure, performance and analysis of college library website, web page.

While undertaking WIF study, it is necessary to select a suitable search engine that will count the number of pages in the web site and the number of pages linking to the web site. The data collection method extensively makes use of special keywords like domain, link domain, link domain AND domain, and link domain AND NOT domain from search engines.

E. SCOPE AND LIMITATIONS:

Researcher selected a topic "**Webometric study of college libraries in Maharashtra: 2019-22".** Researcher only considers college library websites, which are affiliated to universities of Maharashtra state and published in university's annual reports of three academic years from 2019-20 to 2021-22 (i.e. July to June).

F. IMPORTANCE OF THE STUDY OF WEBOMETRIC:

Webometric is a recent field and it has gained recognition. The Association for Library and information Science Education lists webometrics in its research areas classification and the Encyclopedia of Social Measurement. Webometrics consists of four main areas such as webpages, content analysis, web link structure analysis, web uses analysis. It becomes most interesting research area for the collection of electronic information available on the publicly indexable web.

1. INTERNATIONAL STATUS

Global scenario:

The status of webometric study of libraries in different countries of the world is briefly discussed in this section.

A. Malaysia

Islam, M.A. & Alam, M.S. these two authors write in their article titled 'Webometric study of private universities in Bangladesh' published in Malaysian Journal of Library & Information Science, August 2011, Vol. 16(2), p. 115-126 and elaborate the scope for future webometric research in this area. It would be useful to carry out a more comprehensive study comparing more institutions and comparing web with conventional publication output and indicators of economic and technological development. Web link analysis of university website is promising in general terms, but in practice web links are not entirely equivalent to citations in the scholarly literature as much of the web content of university sites also include administrative, teaching and recreational content.

B. Nebraska

Johnson S. and Ramasamy K. stated in their article titled "Content Analysis of Homepages of Library Websites of the top 10 IITs in India" the websites and the homepages of every IIT Library is different from each other. A platform for co-ordination and development of every website is the need of the hour to devise well developed websites to meet the objectives of the institution and the needs and expectations of its users. Web 2.0 tools have become part of every website and commonly looked to by website users. Web 2.0 tools need to be exploited to full potential. These studies have the way for improvement and development of websites and homepages. The article published in Library Philosophy and Practice (e-journal), April 2021.

C. South Africa

Onyancha O reported a survey in "A Webometric study of selected academic libraries in eastern and southern Africa using a link analysis approach" published in SA Jnl. Libs. & Info. Sci., 2007, 73(1) that library in Eastern and Southern Africa are well aware of the benefits and opportunities of the internet and the web. It was encouraging to note that majority of the libraries' websites had links from the respective universities' main home pages and that these links were well labeled with the term 'library'. Web forms were the least popular. It is observed that, South African university libraries performed better than their counterparts in Botswana, Kenya, Tanzania, Uganda and Zimbabwe. No university library had a uniform rank throughout the three variables.

D. Sri Lanka

Ramanayaka K. H. & Chen X. evaluates the webometric status of university library websites with WIF in the article "Application of Webometrics Techniques for Measuring and Evaluating Visibility of University Library Websites in Sri

Lanka" published in Journal of the University Librarians Association of Sri Lanka, 2018, Vol.21 (1), p. 1-17. The study has concluded 6,850 average web pages, 630 average external backlinks, 16 rich files and 194 scholarly articles were found from nine university library websites. Study found significant linear relationship between the WISER index value and size than the WISER index value and richness and scholars. The outcomes of this study would contribute to the benefit of the technological society in the area of web design and its performance evaluation. It would also contribute towards indicating the extent to each library has successfully represented itself on the internet and provides the basis for future research in web evaluation, usability and other related areas.

E. United States

1. Thelwall M. ellaborate "A History of Webometrics", the webometric term has been coined from 1997. The various definitions and conceptual theory of webometrics which published in special section of journal Bulletin of the American Society for Information Science and Technology, Vol. 38(6), p. 19-23.

2. National

- Sujithai, M. and Jeyshankar, R. these two authors investigate in their article titled as "Web page analysis of Indian institute of technologies' (IITs) websites: a webometric study" published in International Journal of Digital Library Services, 2013, Vol. 3(1), p. 55-65 that, websites offering convenient services to users by websites. Webometrics is an unexplored area concerned with webpages, contents of web pages, link structure of web sites and so on. The institutions without its website are unimaginable at present. The web pages play a powerful role for the parent institution as it is an important communication tool.

- Jalal, S., Biswas, S. have states WIF has been widely used as webometric indicators to judge the quality of websites through the value of its co-efficient, but in most cases, it was not reflecting the reliable result. In their article titled as "Web impact factor and link analysis of selected Indian Universities" published in Annals of Library and Information Studies, 2010, Vol 57, p. 09-121.
- Jhamb G. and Ruheta A. have investigated the collected and tabulated information regarding public libraries using open site explorer and find that library's presence on web is more important in order to be more accessed by the users. As per Encyclopedia Britannica, Thanjavur Maharaja Serfoji' Sarasvati Maha Library is a remarkable library in India. but in study, it's present not reach upto mark. Libraries should work on to improve their link structure analysis in order to be reflected in the first page of search engine's results and hence improve their web presence and reach the desired end. The article "A Webometric Study of the Websites of Public libraries" published in International Journal of Library and Information studies, Oct-Dec. 2017, Vol 7(4), p. 83-89.
- "Webometric study of research councils of India" written by Krishnakumar P. and Nirmala P. focused on the study to inspect through webometric method, selecting the websites of Research Councils of India form All India Council of Technical Education (AICTE) website in 13 Research Councils and find out the ranking of websites by analysing tools like Alexa Trafic Rank and Goolge PageRank. published in e-Library Science Research Journal, 2014, Vol 2(8), p. 1-6.
- Thanuskodi S. have evaluated and done the study of the webpage content analysis of institutes of national importance libraries in India. In the article titled "A Webometric Analysis of selected Institutes of National Importance

Websites in India." It is found that general information about homepage features is more in IITs and lease in ISICAL and IISC. The websites are up to date only in few institutes remaining websites do not mentions time or date in the homepage. Webometric techniques are still in experimental stage in testing. published in International Journal of Library Science, 2012, Vol. (1),1, pg. 13-18.

F. SIGNIFICANCE OF THE STUDY:

The digital transformation determines the growing level of competition between higher education institutions (HEI) become tremendous after the pendamic i.e. March.2020 onward. New technologies and applications have made the internet an important medium of communication and information dissemination. The use of internet provides a much-enhanced interface between the user and information. The web through its open standard, set the foundation for global communication and access to resources that millions of computer users enjoy. Increasing importance of web is clearly seen in the form of references/citations in the publications. It should be noted that the term "university" is more commonly used in literature. The websites have now become one of the influenced sources of information on research activities. Web based information resources have great role to play in academic and research activities.

The Ministry of Human resource development (MHRD) and University Grant Commission (UGC) has played a major role in modernizing library services across the country by providing sufficient funds for modernizing infrastructure and by initiating consortia-based subscription to online journals and database through INFLIBNET, etc. because of use of internet the users are more knowledgeable in

using computers and internet for the research and except to have access to it in their time of need. There was insufficient studies are conducted about the evaluation / analyze the college library websites in Marathwada region of Maharashtra. So, it is important to conduct such study of college library websites in Marathwada region of state of Maharashtra.

G. REASON FOR SELECTION OF TOPIC:

Researcher is presently working with school of engineering since 2010. With the advantage of ICT enabled infrastructure in the library. That is why researcher is interested on the concerned topic**.** Researcher undergone the subject "A Webometric Study of College libraries affiliated to Swami Ramanad Teerth Marathwada University, Nanded." while completing her M.Phil. degree in Library and Information science. And while searching the topic for Ph.D. research through Inflibnet's Shodhganga portal it is observed that the study of college library website, contains of college library is very few in Maharashtra state. Researcher find the scope for research in this area.

- To study the usefulness of retrospective and current awareness services offered by libraries.
- To review the institutional repository, databases through its web pages, in-links, external links and Web Impact Factor (WIF) of college library websites in Maharashtra.
- To study the structure and characteristics of web, web-contents, links, web search engines.
- To study the college library websites as the most important internet communication tools.

TENTATIVE CHAPTERS

1. Introduction
2. Review of Related Literature
3. Webometric Study
4. Data Collection, Analysis & Interpretation
5. Finding, Suggestion and Conclusion

Work Plan

Sr. No	Nature of Work	Proposed Period
1	Collection of related literature	6 months
2	Reading article content and information	6 months
3	Data collection	6 months
4	Analytical interpretation of collected data	6 months
5	Thesis writing	6 months
6	Submission	6 months

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7. Verma, M. & Brahmab, K.: A webometric analysis of National Libraries' websites in South Asia, Annals of Library and Information Studies, 64 (June 2017): 116-124.
8. Jeyshankar, R. & Ramesh Babu, R.: Websites of universities in Tamil Nadu: a webometric study, Annals of Library and Information Studies, 56(June 2009): 69-79.
9. Jhamb, G. & Ruhela, A.: A Webometric Study of the Websites of Public libraries, International Journal of Library and Information Studies, ISSN: 2231-4911, 7(4) Oct-Dec, 2017: 83-89.
10. Harrold's Librarians' Glossary and reference book, Ashgete publishing Limited, Hampshire e-book, 10th Ed., 2005: 416.

11. Björneborn, L., & Ingwersen. P.: Toward a basic framework for webometrics. Journal of the American Society for Information Science and Technology,55(14), 2004: 1216-1227.

Place:

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CONSENT LETTER

I have gone through the synopsis of **Ms. TAMBE BHARATI PANDHARINATH PUSHPA** Entitled (Research Topic) "**Webometric study of college libraries in Maharashtra: 2019-22"** submitted for Ph.D. Registration in the subject of **Library & Information science** under the faculty of **Inter – Disciplinary Science**, **Swami Ramanand Teerth Marathwada University, Nanded**.

Research Guide

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